

SEQUENCE LISTING

(1) GENERAL INFORMATION:

(i) APPLICANT: Clark, Ross Gl
Lowman, Henry B.
Robinson, Iain C.A.F.

(ii) TITLE OF INVENTION: Insulin-like Growth Factor Agonist
Molecules

(iii) NUMBER OF SEQUENCES: 109

(iv) CORRESPONDENCE ADDRESS:
(A) ADDRESSEE: Genentech, Inc.
(B) STREET: 1 DNA Way
(C) CITY: South San Francisco
(D) STATE: California
(E) COUNTRY: USA
(F) ZIP: 94080

(v) COMPUTER READABLE FORM:
(A) MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: WinPatin (Genentech)

(vi) CURRENT APPLICATION DATA:
(A) APPLICATION NUMBER: 09/052888
(B) FILING DATE: 31-Mar-1998
(C) CLASSIFICATION:

(viii) ATTORNEY/AGENT INFORMATION:
(A) NAME: Hasak, Janet E.
(B) REGISTRATION NUMBER: 28,616
(C) REFERENCE/DOCKET NUMBER: P1071P1

(ix) TELECOMMUNICATION INFORMATION:
(A) TELEPHONE: 650/225-1896
(B) TELEFAX: 650/952-9881

(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Glu Leu Asp Gly Trp Val Cys Ile Lys Val Gly Glu Gln Asn Leu
1 5 10 15

Cys Tyr Leu Ala Glu Gly
20 21

(2) INFORMATION FOR SEQ ID NO:2:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Trp Phe Lys Thr Val Cys Tyr Glu Trp Glu Asp Glu Val Gln Cys
1 5 10 15

Tyr Thr Leu Glu Glu Gly
20 21

(2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Arg Val Gly Ala Tyr Ile Ser Cys Ser Glu Thr Glu Cys Trp Val
1 5 10 15

Glu Asp Leu Leu Asp Gly
20 21

(2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Val Ala Trp Glu Val Cys Trp Asp Arg His Asp Gln Gly Tyr Ile
1 5 10 15

Cys Thr Thr Asp Ser
20

(2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 amino acids

- (B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Ala Trp Glu Val Cys Trp Asp Arg His Gln Gly Tyr Ile Cys Thr
1 5 10 15

Thr Asp Ser
18

(2) INFORMATION FOR SEQ ID NO:6:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 15 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Cys Trp Asp Arg His Asp Gln Gly Tyr Ile Cys Thr Thr Asp Ser
1 5 10 15

(2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Glu Glu Ser Glu Cys Phe Glu Gly Pro Gly Tyr Val Ile Cys Gly
1 5 10 15

Leu Val Gly
18

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Asp Met Gly Val Cys Ala Asp Gly Pro Trp Met Tyr Val Cys Glu
1 5 10 15

Trp Thr Glu
18

(2) INFORMATION FOR SEQ ID NO:9:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Ser Glu Glu Val Cys Trp Pro Val Ala Glu Trp Tyr Leu Cys Asn
1 5 10 15

Met Trp Gly
18

(2) INFORMATION FOR SEQ ID NO:10:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 15 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Ser Glu Glu Val Cys Trp Pro Val Ala Glu Trp Tyr Leu Cys Asn
1 5 10 15

(2) INFORMATION FOR SEQ ID NO:11:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 15 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Val Cys Trp Pro Val Ala Glu Trp Tyr Leu Cys Asn Met Trp Gly
1 5 10 15

(2) INFORMATION FOR SEQ ID NO:12:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 12 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Val Cys Trp Pro Val Ala Glu Trp Tyr Leu Cys Asn
1 5 10 12

(2) INFORMATION FOR SEQ ID NO:13:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 18 amino acids
 - (B) TYPE: Amino Acid
 - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Thr Gly Val Asp Cys Gln Cys Gly Pro Val His Cys Val Cys Met
1 5 10 15

Asp Trp Ala
18

(2) INFORMATION FOR SEQ ID NO:14:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 18 amino acids
 - (B) TYPE: Amino Acid
 - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Thr Val Ala Asn Cys Asp Cys Tyr Met Pro Leu Cys Leu Cys Tyr
1 5 10 15

Asp Ser Asp
18

(2) INFORMATION FOR SEQ ID NO:15:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 15 amino acids
 - (B) TYPE: Amino Acid
 - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Cys Arg Ala Gly Pro Leu Gln Trp Leu Cys Glu Lys Tyr Phe Gly
1 5 10 15

(2) INFORMATION FOR SEQ ID NO:16:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 19 amino acids
 - (B) TYPE: Amino Acid
 - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Ser Glu Val Gly Cys Arg Ala Gly Pro Leu Gln Trp Leu Cys Glu
1 5 10 15
Lys Tyr Phe Gly
19

(2) INFORMATION FOR SEQ ID NO:17:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 400 base pairs
(B) TYPE: Nucleic Acid
(C) STRANDEDNESS: Double
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

TCACGTAAAA AGGGTATCTA GAATTATGAT GATTACTCTG CGCAAACCTTC 50
CTCTGGCGGT TGCCGTCGCA GCGGGCGTAA TGTCTGCTCA GGCCATGGCC 100
GGTCCCCGAAA CTCTGTGCGG TGCTGAAC TG GTGACGCTC TGCAGTTCGT 150
ATGTGGTGAT CGAGGGCTTCC TGTTCAACAA ACCGACTGGG GCTGGATCCT 200
CCTCTCGTCG TGCTCCCCAG ACTGGTATTG TTGACGAATG CTGCTTCGT 250
TCTTGCACC TGCGTCGTCT GGAAATGTAT TGCGCTCCCC TGAAACCCGC 300
TAAATCTGCT TAGAAGCTCC TAACGCTCGG TTGCCGCCGG GCGTTTTTA 350
TTGTTAACTC ATGTTTGACA GCTTATCATC GATAAGCTTT AATGCGGTAG 400

(2) INFORMATION FOR SEQ ID NO:18:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 95 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Met Met Ile Thr Leu Arg Lys Leu Pro Leu Ala Val Ala Val Ala
1 5 10 15
Ala Gly Val Met Ser Ala Gln Ala Met Ala Gly Pro Glu Thr Leu
20 25 30
Cys Gly Ala Glu Leu Val Asp Ala Leu Gln Phe Val Cys Gly Asp
35 40 45

Arg Gly Phe Leu Phe Asn Lys Pro Thr Gly Ala Gly Ser Ser Ser
50 55 60

Arg Arg Ala Pro Gln Thr Gly Ile Val Asp Glu Cys Cys Phe Arg
65 70 75

Ser Cys Asp Leu Arg Arg Leu Glu Met Tyr Cys Ala Pro Leu Lys
80 85 90

Pro Ala Lys Ser Ala
95

(2) INFORMATION FOR SEQ ID NO:19:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 5115 base pairs
 - (B) TYPE: Nucleic Acid
 - (C) STRANDEDNESS: Double
 - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

GAATTCAACT TCTCCATACT TTGGATAAGG AAATACAGAC ATGAAAAATC 50
TCATTGCTGA GTTGTATTT AAGCTTGCCC AAAAAGAAGA AGAGTCGAAT 100
GAACTGTGTG CGCAGGTAGA AGCTTGAG ATTATCGTCA CTGCAATGCT 150
TCGCAATATG GCGCAAAATG ACCAACAGCG GTTGATTGAT CAGGTAGAGG 200
GGGCGCTGTA CGAGGTAAAG CCCGATGCCA GCATTCTGA CGACGATACG 250
GAGCTGCTGC GCGATTACGT AAAGAAGTTA TTGAAGCATC CTCGTCAGTA 300
AAAAGTTAAT CTTTCAACA GCTGTCATAA AGTTGTCACG GCCGAGACTT 350
ATAGTCGCTT TGTTTTATT TTTTAATGTA TTTGTAACTA GTACGCAAGT 400
TCACGTAAA AGGGTATCTA GAATTATGAT GATTACTCTG CGCAAACCTC 450
CTCTGGCGGT TGCGTCGCA GCGGGCGTAA TGTCTGCTCA GGCCATGGCC 500
GGTCCCGAAA CTCTGTGCGG TGCTGAACG GTTGACGCTC TGCAGTCGT 550
ATGTGGTGAT CGAGGCTTCC TGTTCAACAA ACCGACTGGG GCTGGATCCT 600
CCTCTCGTCG TGCTCCCCAG ACTGGTATTG TTGACGAATG CTGCTTCGT 650
TCTTGCGACC TGCGTCGTCT GGAAATGTAT TGCGCTCCCC TGAAACCCGC 700
TAAATCTGCT TAGAAGCTCC TAACGCTCGG TTGCCGCCGG GCGTTTTTA 750

TTGTTAACTC ATGTTGACA GCTTATCATC GATAAGCTT AATGCGGTAG 800
TTTATCACAG TTAAATTGCT AACGCAGTCA GGCACCGTGT ATGAAATCTA 850
ACAATGCGCT CATCGTCATC CTCGGCACCG TCACCCCTGGA TGCTGTAGGC 900
ATAGGCTTGG TTATGCCGGT ACTGCCGGC CTCTTGCGGG ATATCGTCCA 950
TTCCGACAGC ATCGCCAGTC ACTATGGCGT GCTGCTAGCG CTATATGCGT 1000
TGATGCAATT TCTATGCGCA CCCGTTCTCG GAGCACTGTC CGACCGCTTT 1050
GGCCGCCGCC CAGTCCTGCT CGCTTCGCTA CTTGGAGCCA CTATCGACTA 1100
CGCGATCATG GCGACCACAC CCGTCCTGTG GATCCTCTAC GCCGGACGCA 1150
TCGTGGCCGG CATCACCGGC GCCACAGGTG CGGTTGCTGG CGCCTATATC 1200
GCCGACATCA CCGATGGGGA AGATCGGGCT CGCCACTTCG GGCTCATGAG 1250
CGCTTGTTC GGCGTGGGTA TGGTGGCAGG CCCCGTGGCC GGGGGACTGT 1300
TGGGCGCCAT CTCCTTGCAT GCACCATTCC TTGCGGCCGG GGTGCTAAC 1350
GGCCTCAACC TACTACTGGG CTGCTTCCTA ATGCAGGAGT CGCATAAGGG 1400
AGAGCGTCGA CCGATGCCCT TGAGAGCCTT CAACCCAGTC AGCTCCTTCC 1450
GGTGGGCGCG GGGCATGACT ATCGTCGCCG CACTTATGAC TGTCTTCTT 1500
ATCATGCAAC TCGTAGGACA GGTGCCGGCA GCGCTCTGGG TCATTTCGG 1550
CGAGGACCGC TTTCGCTGGA GCGCGACGAT GATCGGCCTG TCGCTTGCAG 1600
TATTCGGAAT CTTGCACGCC CTCGCTCAAG CCTTCGTCAC TGGTCCCGCC 1650
ACCAAACGTT TCGGCGAGAA GCAGGCCATT ATCGCCGGCA TGGCGGCCGA 1700
CGCGCTGGC TACGTCTTGC TGGCGTCGC GACGCGAGGC TGGATGGCCT 1750
TCCCCATTAT GATTCTTCTC GCTTCCGGCG GCATCGGGAT GCCCGCGTTG 1800
CAGGCCATGC TGTCCAGGCA GGTAGATGAC GACCATCAGG GACAGCTTCA 1850
AGGATCGCTC GCGGCTCTTA CCAGCCTAAC TTCGATCACT GGACCGCTGA 1900
TCGTCACGGC GATTATGCC GCCTCGGCAG GCACATGGAA CGGGTTGGCA 1950
TGGATTGTAG GCGCCGCCCT ATACCTTGTC TGCCTCCCCG CGTTGCCTCG 2000
CGGTGCATGG AGCCGGGCCA CCTCGACCTG AATGGAAGCC GGCGGCACCT 2050

CGCTAACGGA TTCACCACTC CAAGAATTGG AGCCAATCAA TTCTTGCAGGA 2100
GAACTGTGAA TGCGCAAACC AACCCCTTGGC AGAACATATC CATCGCGTCC 2150
GCCATCTCCA GCAGCCGCAC GCGGCGCATC TCGGGCAGCG TTGGGTCTG 2200
GCCACGGGTG CGCATGATCG TGCTCCTGTC GTTGAGGACC CGGCTAGGCT 2250
GGCGGGGTTG CCTTACTGGT TAGCAGAATG AATCACCGAT ACGCGAGCGA 2300
ACGTGAAGCG ACTGCTGCTG CAAAACGTCT GCGACCTGAG CAACAACATG 2350
AATGGTCTTC GGTTTCCGTG TTTCGTAAAG TCTGGAAACG CGGAAGTCAG 2400
CGCCCTGCAC CATTATGTTC CGGATCTGCA TCGCAGGATG CTGCTGGCTA 2450
CCCTGTGGAA CACCTACATC TGTATTAACG AAGCGCTGGC ATTGACCCCTG 2500
AGTGATTTT CTCTGGTCCC GCCGCATCCA TACCGCCAGT TGTTTACCT 2550
CACAAACGTTTC CAGTAACCGG GCATGTTCAT CATCAGTAAC CCGTATCGTG 2600
AGCATCCTCT CTCGTTTCAT CGGTATCATT ACCCCCATGA ACAGAAATTC 2650
CCCCTTACAC GGAGGCATCA AGTGACCAAA CAGGAAAAAA CCGCCCTTAA 2700
CATGGCCCCGC TTTATCAGAA GCCAGACATT AACGCTTCTG GAGAAACTCA 2750
ACGAGCTGGA CGCGGATGAA CAGGCAGACA TCTGTGAATC GCTTCACGAC 2800
CACGCTGATG AGCTTTACCG CAGCTGCCTC GCGCGTTTCG GTGATGACGG 2850
TGAAAACCTC TGACACATGC AGCTCCCGGA GACGGTCACA GCTTGTCTGT 2900
AAGCGGATGC CGGGAGCAGA CAAGCCCGTC AGGGCGCGTC AGCGGGTGT 2950
GGCGGGTGTGTC GGGGCGCAGC CATGACCCAG TCACGTAGCG ATAGCGGAGT 3000
GTATACTGGC TTAACTATGC GGCATCAGAG CAGATTGTAC TGAGAGTGCA 3050
CCATATGCGG TGTGAAATAC CGCACAGATG CGTAAGGAGA AAATACCGCA 3100
TCAGGGCGCTC TTCCGCTTCC TCGCTCACTG ACTCGCTGCG CTCGGTCGTT 3150
CGGCTGCGGC GAGCGGTATC AGCTCACTCA AAGGCGGTAA TACGGTTATC 3200
CACAGAATCA GGGGATAACG CAGGAAAGAA CATGTGAGCA AAAGGCCAGC 3250
AAAAGGCCAG GAACCGTAAA AAGGCCCGT TGCTGGCGTT TTTCCATAGG 3300
CTCCGCCCTT CTGACGAGCA TCACAAAAAT CGACGCTCAA GTCAGAGGTG 3350

CGCAAACCCG ACAGGACTAT AAAGATACCA GGCCTTCCC CCTGGAAGCT 3400
CCCTCGTGCG CTCTCCTGTT CCGACCCCTGC CGCTTACCGG ATACCTGTCC 3450
GCCTTCCTCC CTTCGGGAAG CGTGGCGCTT TCTCATAGCT CACGCTGTAG 3500
GTATCTCAGT TCGGTGTAAG TCGTTCGCTC CAAGCTGGC TGTGTGCACG 3550
AACCCCCCGT TCAGCCCGAC CGCTGCGCCT TATCCGGTAA CTATCGTCTT 3600
GAGTCCAACC CGGTAAGACA CGACTTATCG CCACTGGCAG CAGCCACTGG 3650
TAACAGGATT AGCAGAGCGA GGTATGTAAG CGGTGCTACA GAGTTCTTGA 3700
AGTGGTGGCC TAACTACGGC TACACTAGAA GGACAGTATT TGGTATCTGC 3750
GCTCTGCTGA AGCCAGTTAC CTTCGGAAA AGAGTTGGTA GCTCTTGATC 3800
CGGCAAACAA ACCACCGCTG GTAGCGGTGG TTTTTTGTT TGCAAGCAGC 3850
AGATTACGCG CAGAAAAAAA GGATCTCAAG AAGATCCTT GATCTTTCT 3900
ACGGGGTCTG ACGCTCAGTG GAACGAAAAC TCACGTTAAG GGATTTGGT 3950
CATGAGATTA TCAAAAAGGA TCTTCACCTA GATCCTTTA AATTAAAAAT 4000
GAAGTTTAA ATCAATCTAA AGTATATATG AGTAAACTTG GTCTGACAGT 4050
TACCAATGCT TAATCAGTGA GGCACCTATC TCAGCGATCT GTCTATTCG 4100
TTCATCCATA GTTGCCTGAC TCCCCGTGCGT GTAGATAACT ACGATAACGGG 4150
AGGGCTTACC ATCTGGCCCC AGTGCTGCAA TGATACCGCG AGACCCACGC 4200
TCACCGGCTC CAGATTATC AGCAATAAAC CAGCCAGCCG GAAGGGCCGA 4250
GCGCAGAAGT GGTCCCTGCAA CTTTATCCGC CTCCATCCAG TCTATTAATT 4300
GTTGCCGGGA AGCTAGAGTA AGTAGTTCGC CAGTTAATAG TTTGCGAAC 4350
GTTGTTGCCA TTGCTGCAGG CATCGTGGTG TCACGCTCGT CGTTGGTAT 4400
GGCTTCATTC AGCTCCGGTT CCCAACGATC AAGGCGAGTT ACATGATCCC 4450
CCATGTTGTG CAAAAAAGCG GTTAGCTCCT TCGGGCCTCC GATCGTTGTC 4500
AGAAGTAAGT TGGCCGCAGT GTTATCACTC ATGGTTATGG CAGCACTGCA 4550
TAATTCTCTT ACTGTCATGC CATCCGTAAG ATGCTTTCT GTGACTGGTG 4600
AGTACTCAAC CAAGTCATTC TGAGAATAGT GTATGCGGCG ACCGAGTTGC 4650

TCTTGCCCCG CGTCAACACG GGATAATACC GCGCACATA GCAGAACTTT 4700
AAAAGTGCTC ATCATGGAA AACGTTCTTC GGGGCAGAAA CTCTCAAGGA 4750
TCTTACCGCT GTTGAGATCC AGTTCGATGT AACCCACTCG TGCACCCAAC 4800
TGATCTTCAG CATCTTTAC TTTCACCAGC GTTTCTGGGT GAGCAAAAC 4850
AGGAAGGCAA AATGCCGCAA AAAAGGGAAT AAGGGCGACA CGGAAATGTT 4900
GAATACTCAT ACTCTTCCTT TTTCAATATT ATTGAAGCAT TTATCAGGGT 4950
TATTGTCTCA TGAGCGGATA CATATTTGAA TGTATTTAGA AAAATAAACCA 5000
AATAGGGGTT CCGCGCACAT TTCCCCGAAA AGTGCCACCT GACGTCTAAG 5050
AAACCATTAT TATCATGACA TTAACCTATA AAAATAGGCG TATCACGAGG 5100
CCCTTTCGTC TTCAA 5115

(2) INFORMATION FOR SEQ ID NO:20:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 5140 base pairs
(B) TYPE: Nucleic Acid
(C) STRANDEDNESS: Single
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

GAATTCAACT TCTCCATACT TTGGATAAGG AAATACAGAC ATGAAAAATC 50
TCATTGCTGA GTTGTATTT AAGCTTGCCC AAAAAGAAGA AGAGTCGAAT 100
GAACTGTGTG CGCAGGTAGA AGCTTGAG ATTATCGTCA CTGCAATGCT 150
TCGCAATATG GCGCAAAATG ACCAACAGCG GTTGATTGAT CAGGTAGAGG 200
GGGCGCTGTA CGAGGTAAAG CCCGATGCCA GCATTCTGA CGACGATACG 250
GAGCTGCTGC GCGATTACGT AAAGAAGTTA TTGAAGCATC CTCGTCAGTA 300
AAAAGTTAAT CTTTCAACA GCTGTCATAA AGTGTACG GCCGAGACTT 350
ATAGTCGCTT TGTTTTATT TTTTAATGTA TTTGTAACTA GTACGCAAGT 400
TCACGTAAA AGGGTATCTA GAGGTTGAGG TGATTTATG AAAAAGAATA 450
TCGCATTTCT TCTTGCATCT ATGTTCGTTT TTTCTATTGC TACAAATGCC 500
TATGCATCTG GTACCGCCAT GGCTGATCCG AACCGTTCC CGGGTAAAGA 550

TCTGGCAGGT TCACCAGGTG GAGGATCCGG AGGAGGCCGC GAGGGTGACG 600
ATCCCGCAAA AGCGGCCTT AACTCCCTGC AAGCCTCAGC GACCGAATAT 650
ATCGGTTATG CGTGGCGAT GGTTGTTGTC ATTGTCGGCG CAACTATCGG 700
TATCAAGCTG TTTAAGAAAT TCACCTCGAA AGCAAGCTGA TAAACCGATA 750
CAATTAAAGG CTCCTTTGG AGCCTTTTT TTTGGAGATT TTCAACGTGA 800
AAAAATTATT ATTCGCAATT CCTTTAGTTG TTCCTTCTA TTCTCACTCC 850
GCTGAAACTG TTGAAAGTTG TTTAGCAAAA CCCCATACAG AAAATTCAATT 900
TACTAACGTC TGGAAAGACG ACAAAACATT AGATCGTTAC GCTAACTATG 950
AGGGTTGTCT GTGGAATGCT ACAGGCCTTG TAGTTGTAC TGTTGACGAA 1000
ACTCAGTGTC TAGCTAGAGT GGCGGTGGCT CTGGTTCCGG TGATTTGAT 1050
TATGAAAAGA TGGCAAACGC TAATAAGGGG GCTATGACCG AAAATGCCGA 1100
TGAAAACGCG CTACAGTCTG ACGCTAAAGG CAAACTTGAT TCTGTCGCTA 1150
CTGATTACGG TGCTGCTATC GATGGTTCA TTGGTGACGT TTCCGGCCTT 1200
GCTAATGGTA ATGGTGCTAC TGTTGATTT GCTGGCTCTA ATTCCCAAAT 1250
GGCTCAAGTC GGTGACGGTG ATAATTCAACC TTTAATGAAT AATTCCGTC 1300
AATATTACCA TTCCCTCCCT CAATCGGTTG AATGTCGCC 1350
AGCGCTGGTA AACCATATGA ATTTCTATT GATTGTGACA AAATAAACTT 1400
ATTCCCGTGGT GTCTTGCGT TTCTTTATA TGTTGCCACC TTTATGTATG 1450
TATTTCTAC GTTGCTAAC ATACTGCGTA ATAAGGAGTC TTAATCATGC 1500
CAGTTCTTT GGCTAGCGCC GCCCTATACC TTGTCTGCCT CCCCGCGTTG 1550
CGTCGCGGTG CATGGAGCCG GGCCACCTCG ACCTGAATGG AAGCCGGCGG 1600
CACCTCGCTA ACGGATTACAC CACTCCAAGA ATTGGAGCCA ATCAATTCTT 1650
GCGGAGAACT GTGAATGCGC AAACCAACCC TTGGCAGAAC ATATCCATCG 1700
CGTCCGCCAT CTCCAGCAGC CGCACCGGGC GCATCTCGGG CAGCGTTGGG 1750
TCCTGGCCAC GGGTGCACAT GATCGTGCTC CTGTCGTTGA GGACCCGGCT 1800
AGGCTGGCGG GGTGCGCTTA CTGGTTAGCA GAATGAATCA CCGATACGCG 1850

AGCGAACGTG AAGCGACTGC TGCTGCAAAA CGTCTGCGAC CTGAGCAACA 1900
ACATGAATGG TCTTCGGTTT CCGTGTTCG TAAAGTCTGG AAACGCGGAA 1950
GTCAGCGCCC TGCACCATT A TGTTCCGGAT CTGCATCGCA GGATGCTGCT 2000
GGCTACCCCTG TGGAACACACT ACATCTGTAT TAACGAAGCG CTGGCATTGA 2050
CCCTGAGTGA TTTTCTCTG GTCCCGCCGC ATCCATACCG CCAGTTGTTT 2100
ACCCTCACAA CGTTCCAGTA ACCGGGCATG TTCATCATCA GTAACCCGTA 2150
TCGTGAGCAT CCTCTCTCGT TTCATCGGTA TCATTACCC CATGAACAGA 2200
AATTCCCCCT TACACGGAGG CATCAAGTGA CCAAACAGGA AAAAACGCC 2250
CTTAACATGG CCCGCTTTAT CAGAAGCCAG ACATTAACGC TTCTGGAGAA 2300
ACTCAACGAG CTGGACGCGG ATGAACAGGC AGACATCTGT GAATCGCTTC 2350
ACGACCACGC TGATGAGCTT TACCGCAGGA TCCGGAAATT GTAAACGTTA 2400
ATATTTGTT AAAATTGCGC TTAAATTGTT GTTAAATCAG CTCATTTTT 2450
AACCAATAGG CCGAAATCGG CAAAATCCCT TATAAATCAA AAGAATAGAC 2500
CGAGATAGGG TTGAGTGTG TTCCAGTTG GAACAAGAGT CCACTATTAA 2550
AGAACGTGGA CTCCAACGTC AAAGGGCGAA AAACCGTCTA TCAGGGCTAT 2600
GGCCCACATAC GTGAACCATC ACCCTAATCA AGTTTTTGG GGTGAGGTG 2650
CCGTAAAGCA CTAAATCGGA ACCCTAAAGG GAGCCCCGA TTTAGAGCTT 2700
GACGGGGAAA GCCGGCGAAC GTGGCGAGAA AGGAAGGGAA GAAAGCGAAA 2750
GGAGCGGGCG CTAGGGCGCT GGCAAGTGT A GCGTCACGC TGCGCGTAAC 2800
CACCACACCC GCCCGCCTTA ATGCGCCGCT ACAGGGCGCG TCCGGATCCT 2850
GCCTCGCGCG TTTCGGTGAT GACGGTAAAA ACCTCTGACA CATGCAGCTC 2900
CCGGAGACGG TCACAGCTTG TCTGTAAGCG GATGCCGGGA GCAGACAAGC 2950
CCGTCAGGGC GCGTCAGCGG GTGTTGGCGG GTGTCGGGGC GCAGCCATGA 3000
CCCAGTCACG TAGCGATAGC GGAGTGTATA CTGGCTTAAC TATGCGGCAT 3050
CAGAGCAGAT TGTACTGAGA GTGCACCATA TGCGGTGTGA AATACCGCAC 3100
AGATGCGTAA GGAGAAAATA CCGCATCAGG CGCTCTTCCG CTTCCCGCT 3150

CACTGACTCG CTGCCTCGG TCGTCGGT GCGCGAGCG GTATCAGCTC 3200
ACTCAAAGGC GGTAATACGG TTATCCACAG AATCAGGGGA TAACGCAGGA 3250
AAGAACATGT GAGCAAAAGG CCAGCAAAAG GCCAGGAACC GTAAAAGGC 3300
CGCGTTGCTG GCGTTTTCC ATAGGCTCCG CCCCCCTGAC GAGCATCACA 3350
AAAATCGACG CTCAAGTCAG AGGTGGCGAA ACCCGACAGG ACTATAAAGA 3400
TACCAGGCGT TTCCCCCTGG AAGCTCCCTC GTGCCTCTC CTGTTCCGAC 3450
CCTGCCGCTT ACCGGATACC TGTCCGCCTT TCTCCCTTCG GGAAGCGTGG 3500
CGCTTTCTCA TAGCTCACGC TGTAGGTATC TCAGTTCGGT GTAGGTCGTT 3550
CGCTCCAAGC TGGGCTGTGT GCACGAACCC CCCGTTCAAGC CCGACCGCTG 3600
CGCCTTATCC GGTAACTATC GTCTTGAGTC CAACCCGGTA AGACACGACT 3650
TATGCCACT GGCAGCAGCC ACTGGTAACA GGATTAGCAG AGCGAGGTAT 3700
TAGGGCGGTG CTACAGAGTT CTTGAAGTGG TGGCCTAACT ACGGCTACAC 3750
TAGAAGGACA GTATTTGGTA TCTGCCTCT GCTGAAGCCA GTTACCTTCG 3800
GAAAAAGAGT TGGTAGCTCT TGATCCGGCA AACAAACCAC CGCTGGTAGC 3850
GGTGGTTTT TTGTTTGCCTA GCAGCAGATT ACGCGCAGAA AAAAAGGATC 3900
TCAAGAAGAT CCTTGATCT TTTCTACGGG GTCTGACGCT CAGTGGAACG 3950
AAAACTCACG TTAAGGGATT TTGGTCATGA GATTATCAA AAGGATCTTC 4000
ACCTAGATCC TTTAAATTA AAAATGAAGT TTTAAATCAA TCTAAAGTAT 4050
ATATGAGTAA ACTTGGTCTG ACAGTTACCA ATGCTTAATC AGTGAGGCAC 4100
CTATCTCAGC GATCTGTCTA TTTCGTTCAT CCATAGTTGC CTGACTCCCC 4150
GTCGTGTAGA TAACTACGAT ACGGGAGGGC TTACCATCTG GCCCCAGTGC 4200
TGCAATGATA CCGCGAGACC CACGCTCACC GGCTCCAGAT TTATCAGCAA 4250
TAAACCAGCC AGCCGGAAGG GCCGAGCGCA GAAGTGGTCC TGCAACTTTA 4300
TCCGCCCTCA TCCAGTCTAT TAATTGTTGC CGGGAAAGCTA GAGTAAGTAG 4350
TTCGCCAGTT AATAGTTGC GCAACGTTGT TGCCATTGCT GCAGGCATCG 4400
TGGTGTACG CTCGTCGTTT GGTATGGCTT CATTCAGCTC CGGTTCCCAA 4450

CGATCAAGGC GAGTTACATG ATCCCCATG TTGTGCAAAA AAGCGGTTAG 4500
CTCCTTCGGT CCTCCGATCG TTGTCAGAAG TAAGTTGGCC GCAGTGTAT 4550
CACTCATGGT TATGGCAGCA CTGCATAATT CTCTTACTGT CATGCCATCC 4600
GTAAGATGCT TTTCTGTGAC TGGTGAGTAC TCAACCAAAGT CATTCTGAGA 4650
ATAGTGTATG CGGCGACCGA GTTGCTCTTG CCCGGCGTCA ACACGGGATA 4700
ATACCGCGCC ACATAGCAGA ACTTTAAAAG TGCTCATCAT TGGAAAACGT 4750
TCTTCGGGGC GAAAACCTCTC AAGGATCTTA CCGCTGTTGA GATCCAGTTC 4800
GATGTAACCC ACTCGTGCAC CCAACTGATC TTCAGCATCT TTTACTTTCA 4850
CCAGCGTTTC TGGGTGAGCA AAAACAGGAA GGCAAAATGC CGCAAAAAAG 4900
GGAATAAGGG CGACACGGAA ATGTTGAATA CTCATACTCT TCCTTTTCA 4950
ATATTATTGA AGCATTATTC AGGGTTATTG TCTCATGAGC GGATACATAT 5000
TTGAATGTAT TTAGAAAAAT AAACAAATAG GGGTTCCGCG CACATTTCCC 5050
CGAAAAGTGC CACCTGACGT CTAAGAAACC ATTATTATCA TGACATTAAC 5100
CTATAAAAAT AGGCGTATCA CGAGGCCCTT TCGTCTCAA 5140

(2) INFORMATION FOR SEQ ID NO:21:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 77 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Ser	Gly	Thr	Ala	Met	Ala	Asp	Pro	Asn	Arg	Phe	Arg	Gly	Lys	Asp
1					5				10				15	
Leu	Ala	Gly	Ser	Pro	Gly	Gly	Ser	Gly	Gly	Gly	Ala	Glu	Gly	
					20				25			30		
Asp	Asp	Pro	Ala	Lys	Ala	Ala	Phe	Asn	Ser	Leu	Gln	Ala	Ser	Ala
					35				40			45		
Thr	Glu	Tyr	Ile	Gly	Tyr	Ala	Trp	Ala	Met	Val	Val	Val	Ile	Val
					50				55			60		
Gly	Ala	Thr	Ile	Gly	Ile	Lys	Leu	Phe	Lys	Lys	Phe	Thr	Ser	Lys
					65				70			75		

Ala Ser
77

(2) INFORMATION FOR SEQ ID NO:22:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 50 base pairs
(B) TYPE: Nucleic Acid
(C) STRANDEDNESS: Single
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

GTTCGTATGT GGTGATCGAG GCTTCCTGTT CAACAAACCG ACTGGGGCTG 50

(2) INFORMATION FOR SEQ ID NO:23:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 58 base pairs
(B) TYPE: Nucleic Acid
(C) STRANDEDNESS: Single
(D) TOPOLOGY: Linear
(ii) MOLECULE TYPE: Nucleic Acid

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

GATCCAGCCC CAGTCGGTTT GTTGAACAGG AAGCCTCGAT CACCACATAC 50

GAACTGCA 58

(2) INFORMATION FOR SEQ ID NO:24:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Ser Gly Thr Ala Cys Xaa Xaa Gly Pro Xaa Xaa Xaa Xaa Cys Ser
1 5 10 15

Leu Ala Gly Ser Pro
20

(2) INFORMATION FOR SEQ ID NO:25:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 amino acids
(B) TYPE: Amino Acid

(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Xaa Xaa Xaa Xaa Cys Xaa Xaa Gly Pro Xaa Xaa Xaa Xaa Cys Xaa
1 5 10 15

Xaa Xaa Xaa
18

(2) INFORMATION FOR SEQ ID NO:26:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa
20

(2) INFORMATION FOR SEQ ID NO:27:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Cys Xaa Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa
20

(2) INFORMATION FOR SEQ ID NO:28:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa
20

(2) INFORMATION FOR SEQ ID NO:29:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa
20

(2) INFORMATION FOR SEQ ID NO:30:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys
1 5 10 15

Xaa Xaa Xaa Xaa Xaa
20

(2) INFORMATION FOR SEQ ID NO:31:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys
1 5 10 15

Xaa Xaa Xaa Xaa Xaa
20

(2) INFORMATION FOR SEQ ID NO:32:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids

- (B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15
Cys Xaa Xaa Xaa Xaa
20

(2) INFORMATION FOR SEQ ID NO:33:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

Xaa Xaa Xaa Xaa Cys Xaa
1 5 10 15
Cys Xaa Xaa Xaa Xaa
20

(2) INFORMATION FOR SEQ ID NO:34:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Gly Gly Thr Tyr Ser Cys His Phe Gly Pro Leu Thr Trp Val Cys
1 5 10 15
Lys Pro Gln Gly Gly
20

(2) INFORMATION FOR SEQ ID NO:35:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 10 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

Cys Xaa Xaa Gly Pro Xaa Xaa Xaa Xaa Cys
1 5 10

(2) INFORMATION FOR SEQ ID NO:36:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 70 base pairs
(B) TYPE: Nucleic Acid
(C) STRANDEDNESS: Single
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

GCCTATGCAT CTGGTACCGC CTGCNNNSNS GGTCTNNNSN NSNNNNNSTG 50

TTCTCTGGCA GGTCACCAG 70

(2) INFORMATION FOR SEQ ID NO:37:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 91 base pairs
(B) TYPE: Nucleic Acid
(C) STRANDEDNESS: Single
(D) TOPOLOGY: Linear
(ii) MOLECULE TYPE: Nucleic Acid

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

GCTACAAATG CCTATGCANN SNNNSNNNSNS TGCNNNSNSG GTCCTNNNSNN 50

SNNNSNNSTGT NNSNNNSNSN NSGGTGGAGG ATCCGGAGGA G 91

(2) INFORMATION FOR SEQ ID NO:38:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 97 base pairs
(B) TYPE: Nucleic Acid
(C) STRANDEDNESS: Single
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

GCTACAAATG CCTATGCANN SNNNSNNNSNS NNNSNNNST GCNNNSNNNSNN 50

SNNSTGCNNNS NNSNNNSNSN NSNNNSNNSGG TGGAGGATCC GGAGGAG 97

(2) INFORMATION FOR SEQ ID NO:39:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 97 base pairs
(B) TYPE: Nucleic Acid
(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

GCTACAAATG CCTATGCANN SNNNSNNSN NSNSNNNST GCNNNSNN 50

SNNNSNNSTGC NNSNNSNNSN NSNNSNNSGG TGGAGGATCC GGAGGAG 97

(2) INFORMATION FOR SEQ ID NO:40:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 97 base pairs
- (B) TYPE: Nucleic Acid
- (C) STRANDEDNESS: Single
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

GCTACAAATG CCTATGCANN SNNNSNNSN NSNSNNSTGCN NSNNSNNSNN 50

SNNNSNNSTGC NNSNNSNNSN NSNNSNNSGG TGGAGGATCC GGAGGAG 97

(2) INFORMATION FOR SEQ ID NO:41:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 97 base pairs
- (B) TYPE: Nucleic Acid
- (C) STRANDEDNESS: Single
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

GCTACAAATG CCTATGCANN SNNNSNNSN NSNSNNSTGCN NSNNSNNSNN 50

SNNSNNSNN SNNSNNNSN NSNNSNNSGG TGGAGGATCC GGAGGAG 97

(2) INFORMATION FOR SEQ ID NO:42:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 97 base pairs
- (B) TYPE: Nucleic Acid
- (C) STRANDEDNESS: Single
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

GCTACAAATG CCTATGCANN SNNSNNSNN NNSTGCNN SNNSNNNSNN 50

SNNNSNNNSN TGCNNSNNSN NSNNSNNSGG TGGAGGATCC GGAGGAG 97

(2) INFORMATION FOR SEQ ID NO:43:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 97 base pairs
(B) TYPE: Nucleic Acid
(C) STRANDEDNESS: Single
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

GCTACAAATG CCTATGCANN SNNNSNNNSN NNSTGCNNSN NSNNSNNSNN 50

SNNNSNNNSN NNSTGCNNSN NSNNSNNSGG TGGAGGATCC GGAGGAG 97

(2) INFORMATION FOR SEQ ID NO:44:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 97 base pairs
(B) TYPE: Nucleic Acid
(C) STRANDEDNESS: Single
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

GCTACAAATG CCTATGCANN SNNNSNNNSN TGCNNSNNSN NSNNSNNSNN 50

SNNNSNNNSN NNSTGCNNSN NSNNSNNSGG TGGAGGATCC GGAGGAG 97

(2) INFORMATION FOR SEQ ID NO:45:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa
20

(2) INFORMATION FOR SEQ ID NO:46:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 97 base pairs
(B) TYPE: Nucleic Acid

- (C) STRANDEDNESS: Single
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

GCTACAAATG CCTATGCANN SNNNSNNSN NSNNNSNNSN NSNNNSNN 50
SNNNSNNSN NSNNNSNNSN NSNNSNNSGG TGGAGGATCC GGAGGAG 97

(2) INFORMATION FOR SEQ ID NO:47:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

Ser Gly Thr Ala Cys Tyr Gly Gly Pro Glu Trp Trp Cys Cys Ser
1 5 10 15
Leu Ala Gly Ser Pro
20

(2) INFORMATION FOR SEQ ID NO:48:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

Asp Leu Ala Ile Cys Ala Glu Gly Pro Glu Ile Trp Val Cys Glu
1 5 10 15
Glu Thr Ser
18

(2) INFORMATION FOR SEQ ID NO:49:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

Asp Phe Trp Ile Cys Leu Ser Gly Pro Gly Trp Glu Glu Cys Leu
1 5 10 15

Glu Trp Trp
18

(2) INFORMATION FOR SEQ ID NO:50:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

Gly Ser Ala Gly Gln Gly Met Thr Glu Glu Trp Ala Trp Ile Trp
1 5 10 15

Glu Trp Trp Lys Glu
20

(2) INFORMATION FOR SEQ ID NO:51:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

Glu Leu Asp Gly Trp Val Cys Ile Lys Val Gly Glu Gln Asn Leu
1 5 10 15

Cys Tyr Leu Ala Glu
20

(2) INFORMATION FOR SEQ ID NO:52:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

Ala Ile Gly Gly Trp Cys Phe Ile Glu Leu Asp Ser Leu Trp Cys
1 5 10 15

Glu Glu Gln Ile Gly
20

(2) INFORMATION FOR SEQ ID NO:53:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids

- (B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

Ser Glu Asp Val Glu Cys Trp Gln Val Trp Glu Asn Leu Val Cys
1 5 10 15

Ser Val Glu His Arg
20

(2) INFORMATION FOR SEQ ID NO:54:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 19 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

Ser Glu Glu Val Cys Trp Pro Val Ala Glu Trp Tyr Leu Cys Asn
1 5 10 15

Met Trp Gly Arg
19

(2) INFORMATION FOR SEQ ID NO:55:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

Arg Val Gly Ala Tyr Ile Ser Cys Ser Glu Thr Glu Cys Trp Val
1 5 10 15

Glu Asp Leu Leu Asp
20

(2) INFORMATION FOR SEQ ID NO:56:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

Trp Phe Lys Thr Val Cys Tyr Glu Trp Glu Asp Glu Val Gln Cys
1 5 10 15

Tyr Thr Leu Glu Glu
20

(2) INFORMATION FOR SEQ ID NO:57:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

Arg Leu Glu Glu Gln Cys Val Glu Val Asn Tyr Glu Pro Ser Cys
1 5 10 15

Ser Phe Thr Ala Asn
20

(2) INFORMATION FOR SEQ ID NO:58:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 19 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

Ser Glu Glu Val Cys Trp Pro Val Ala Glu Trp Tyr Leu Cys Asn
1 5 10 15

Ile Leu Gly Pro
19

(2) INFORMATION FOR SEQ ID NO:59:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

Glu Thr Val Ala Asn Cys Asp Cys Tyr Met Asp Leu Cys Leu Cys
1 5 10 15

Tyr Gly Ser Asp Arg
20

(2) INFORMATION FOR SEQ ID NO:60:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids

- (B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

Tyr His Pro Ile Ser Cys Met Asp His Tyr Tyr Leu Ile Ile Cys
1 5 10 15
Asp Glu Thr Val Asn
20

(2) INFORMATION FOR SEQ ID NO:61:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

Ala Glu Trp Ala Glu Cys Trp Ile Ala Gly Asp Gln Leu Leu Cys
1 5 10 15
Val Gly Lys Asp Asn
20

(2) INFORMATION FOR SEQ ID NO:62:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

Glu Pro Trp Leu Cys Gln Tyr Tyr Glu Ala Ala Met Leu Tyr Leu
1 5 10 15
Cys Trp Glu Glu Gly
20

(2) INFORMATION FOR SEQ ID NO:63:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

Ala Glu Glu Gly Met Val Trp Gly Trp Thr Gly Gly Trp Tyr Asn
1 5 10 15

Leu Asp Glu Leu Cys
20

(2) INFORMATION FOR SEQ ID NO:64:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

Ser Gly Gly Ala Ile Tyr Trp Pro Val Glu Gln Phe Ile Ala Phe
1 5 10 15

Met Ala Val Gly Lys
20

(2) INFORMATION FOR SEQ ID NO:65:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

Ser Gly Gly Ala Ile Tyr Met Pro Val Glu Gln Phe Ile Ala Phe
1 5 10 15

Met Ala Val Gly Lys
20

(2) INFORMATION FOR SEQ ID NO:66:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

Glu Val Leu Leu Cys Ser Asp Gly Pro Gln Leu Tyr Leu Cys Glu
1 5 10 15

Leu Tyr Ala
18

(2) INFORMATION FOR SEQ ID NO:67:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 amino acids

- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

Ser Gly Val Glu Cys Val Trp Gly Pro Gln Trp Gly Phe Cys Val
1 5 10 15

Glu Glu Tyr
18

(2) INFORMATION FOR SEQ ID NO:68:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 18 amino acids
 - (B) TYPE: Amino Acid
 - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

Asp Lys Glu Val Cys Tyr Leu Gly Pro Glu Thr Trp Leu Cys Phe
1 5 10 15

Trp Trp Pro
18

(2) INFORMATION FOR SEQ ID NO:69:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 18 amino acids
 - (B) TYPE: Amino Acid
 - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

Gly Asp Val Glu Cys Ile Glu Gly Pro Trp Gly Glu Leu Cys Val
1 5 10 15

Trp Ala Asp
18

(2) INFORMATION FOR SEQ ID NO:70:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 amino acids
 - (B) TYPE: Amino Acid
 - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

Phe Gly Gly Trp Ser Cys Gln Pro Thr Trp Val Asp Val Tyr Val
1 5 10 15

Cys Asn Phe Glu Glu
20

(2) INFORMATION FOR SEQ ID NO:71:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

Ala Met Trp Val Cys Val Ser Asp Trp Glu Thr Val Glu Glu Cys
1 5 10 15

Ile Gln Tyr Met Tyr
20

(2) INFORMATION FOR SEQ ID NO:72:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

Thr Asn Trp Phe Phe Val Cys Glu Ser Gly His Gln Asp Ile Cys
1 5 10 15

Trp Leu Ala Glu Glu
20

(2) INFORMATION FOR SEQ ID NO:73:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

Ser Glu Val Gly Cys Arg Ala Gly Pro Leu Gln Trp Leu Cys Glu
1 5 10 15

Lys Tyr Phe
18

(2) INFORMATION FOR SEQ ID NO:74:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 19 amino acids

- (B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

Lys Asp Pro Val Cys Gly Glu Gly Pro Leu Met Arg Ile Cys Glu
1 5 10 15

Arg Leu Phe Gly
19

(2) INFORMATION FOR SEQ ID NO:75:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:

Glu Val Asp Gly Arg Trp Trp Ile Val Glu Thr Phe Leu Ala Lys
1 5 10 15

Trp Asp His Met Ala Gly
20 21

(2) INFORMATION FOR SEQ ID NO:76:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

Trp Val Met Glu Cys Gly Ala Gly Pro Trp Pro Glu Gly Cys Thr
1 5 10 15

Phe Met Leu
18

(2) INFORMATION FOR SEQ ID NO:77:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 19 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:

Arg Lys Thr Ser Gln Gly Arg Gly Gln Glu Met Cys Trp Glu Thr
1 5 10 15

Gly Gly Cys Ser
19

(2) INFORMATION FOR SEQ ID NO:78:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

Ser Trp Glu Arg Gly Glu Leu Thr Tyr Met Lys Leu Cys Glu Tyr
1 5 10 15
Met Arg Leu Gln Gln
20

(2) INFORMATION FOR SEQ ID NO:79:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

Glu His Gly Arg Ala Asn Cys Leu Ile Thr Pro Glu Ala Gly Lys
1 5 10 15
Leu Ala Arg Val Thr
20

(2) INFORMATION FOR SEQ ID NO:80:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:

Val Glu Asp Glu Cys Trp Met Gly Pro Asp Trp Ala Val Cys Trp
1 5 10 15
Thr Trp Gly
18

(2) INFORMATION FOR SEQ ID NO:81:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 11 amino acids

- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:

Cys Arg Ala Gly Pro Leu Gln Trp Leu Cys Glu
1 5 10 11

(2) INFORMATION FOR SEQ ID NO:82:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 12 amino acids
 - (B) TYPE: Amino Acid
 - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:

Cys Arg Ala Gly Pro Leu Gln Trp Leu Cys Glu Lys
1 5 10 12

(2) INFORMATION FOR SEQ ID NO:83:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 14 amino acids
 - (B) TYPE: Amino Acid
 - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:83:

Cys Arg Ala Gly Pro Leu Gln Trp Leu Cys Glu Lys Ala Ala
1 5 10 14

(2) INFORMATION FOR SEQ ID NO:84:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 14 amino acids
 - (B) TYPE: Amino Acid
 - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:84:

Cys Arg Lys Gly Pro Leu Gln Trp Leu Cys Glu Leu Tyr Phe
1 5 10 14

(2) INFORMATION FOR SEQ ID NO:85:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 14 amino acids
 - (B) TYPE: Amino Acid
 - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:

Cys Arg Lys Gly Pro Leu Gln Trp Leu Cys Glu Lys Tyr Phe
1 5 10 14

(2) INFORMATION FOR SEQ ID NO:86:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 14 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:86:

Cys Lys Glu Gly Pro Leu Gln Trp Leu Cys Glu Lys Tyr Phe
1 5 10 14

(2) INFORMATION FOR SEQ ID NO:87:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 14 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:87:

Cys Lys Glu Gly Pro Leu Leu Trp Leu Cys Glu Lys Tyr Phe
1 5 10 14

(2) INFORMATION FOR SEQ ID NO:88:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:

Ser Glu Val Gly Cys Arg Glu Gly Pro Leu Gln Trp Leu Cys Glu
1 5 10 15

Lys Tyr Phe
18

(2) INFORMATION FOR SEQ ID NO:89:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 14 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:89:

Cys Ala Ala Gly Pro Leu Gln Trp Leu Cys Glu Lys Tyr Phe
1 5 10 14

(2) INFORMATION FOR SEQ ID NO:90:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 14 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:90:

Cys Arg Ala Gly Pro Leu Gln Trp Leu Cys Glu Arg Tyr Phe
1 5 10 14

(2) INFORMATION FOR SEQ ID NO:91:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 14 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:91:

Cys Arg Ala Gly Pro Leu Gln Trp Leu Cys Glu Lys Phe Phe
1 5 10 14

(2) INFORMATION FOR SEQ ID NO:92:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 14 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:92:

Cys Lys Ala Gly Pro Leu Leu Trp Leu Cys Glu Arg Phe Phe
1 5 10 14

(2) INFORMATION FOR SEQ ID NO:93:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 14 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:93:

Cys Arg Ala Gly Pro Leu Gln Trp Leu Cys Glu Arg Phe Phe
1 5 10 14

(2) INFORMATION FOR SEQ ID NO:94:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 14 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:94:

Cys Arg Glu Gly Pro Leu Gln Trp Leu Cys Glu Arg Phe Phe
1 5 10 14

(2) INFORMATION FOR SEQ ID NO:95:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 14 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:95:

Cys Lys Glu Gly Pro Leu Leu Trp Leu Cys Glu Arg Phe Phe
1 5 10 14

(2) INFORMATION FOR SEQ ID NO:96:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 14 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:96:

Cys Arg Ala Gly Pro Leu Gln Trp Leu Cys Glu Lys Tyr Phe
1 5 10 14

(2) INFORMATION FOR SEQ ID NO:97:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:97:

Ser Glu Met Val Cys Arg Ala Gly Pro Leu Gln Trp Leu Cys Glu
1 5 10 15

Ile Tyr Phe
18

(2) INFORMATION FOR SEQ ID NO:98:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:98:

Glu Ala Arg Val Cys Arg Ala Gly Pro Leu Gln Trp Leu Cys Glu
1 5 10 15
Lys Tyr Phe
18

(2) INFORMATION FOR SEQ ID NO:99:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:99:

Ser Glu Val Gly Cys Arg Ala Gly Pro Leu Gln Trp Leu Cys Glu
1 5 10 15
Lys Tyr Phe Ser Thr Tyr
20 21

(2) INFORMATION FOR SEQ ID NO:100:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 17 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:100:

Cys Arg Ala Gly Pro Leu Gln Trp Leu Cys Glu Lys Tyr Phe Ser
1 5 10 15
Thr Tyr
17

(2) INFORMATION FOR SEQ ID NO:101:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:101:

Ala Ser Glu Glu Val Cys Trp Pro Val Ala Glu Trp Tyr Leu Cys
1 5 10 15

Asn Met Trp Gly Arg
20

(2) INFORMATION FOR SEQ ID NO:102:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 16 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:102:

Ala Ser Glu Glu Val Cys Trp Pro Val Ala Glu Trp Tyr Leu Cys
1 5 10 15

Asn
16

(2) INFORMATION FOR SEQ ID NO:103:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 15 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:103:

Gly Pro Glu Thr Cys Trp Pro Val Ala Glu Trp Tyr Leu Cys Asn
1 5 10 15

(2) INFORMATION FOR SEQ ID NO:104:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 14 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:104:

Glu Glu Val Cys Trp Pro Val Ala Glu Trp Tyr Leu Cys Asn
1 5 10 14

(2) INFORMATION FOR SEQ ID NO:105:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 13 amino acids
(B) TYPE: Amino Acid

(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:105:

Glu Val Cys Trp Pro Val Ala Glu Trp Tyr Leu Cys Asn
1 5 10 13

(2) INFORMATION FOR SEQ ID NO:106:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 11 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:106:

Cys Trp Pro Val Ala Glu Trp Tyr Leu Cys Asn
1 5 10 11

(2) INFORMATION FOR SEQ ID NO:107:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 10 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:107:

Trp Pro Val Ala Glu Trp Tyr Leu Cys Asn
1 5 10

(2) INFORMATION FOR SEQ ID NO:108:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 12 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:108:

Cys Gln Leu Val Arg Pro Asp Leu Leu Leu Cys Gln
1 5 10 12

(2) INFORMATION FOR SEQ ID NO:109:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 11 amino acids
(B) TYPE: Amino Acid
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:109:

Ile Pro Val Ser Pro Asp Trp Phe Val Cys Gln
1 5 10 11